The Corps

of

Royal Canadian Electrical and Mechanical Engineers

RCEME Trades 1944-2020

A Reference Guide

Trade Specifications

Volume 9 - Radar and Fire Control System Trades

The RCEME Heritage Archives

RCEME Trades 1944-2020

A Reference Guide

Trade Specifications

Volume 9 - Radar and Fire Control System Trades

Contents of this Volume

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Control Equipment Artificer Group 4 (proposed), 1954

Control Equipment Technician Group 1 & 2 & 3 (proposed), 1954

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Radar Technician, 1954

Introduction

RCEME Trades 1944-2020, A Reference Guide summarizes the trades that were part of RCEME when the Corps was formed in 1944, and follows the development, amalgamations, changes, and history from that time to the four trades that are part of RCEME today. During the research for that document, many trades specifications and standards were found in the Library and Archives Canada (LAC) and other repositories. These were used to prepare a thumbnail history of each trade in the main reference, but space precluded the inclusion of the complete trade specification and/or standard.

This “Trades Specifications” series supports the main document and includes the original trade specifications and references as they were found at the LAC and elsewhere. This is a source document for researchers. In general, the raw photographs of the LAC file pages have been converted to a searchable .pdf file. No attempt has been made to reformat the contents of the original files.

Guide to the Series

Because of the size of some of the files, the trades have been separated into several volumes, each containing the specifications for a group of trades. The series consists of:

Volume 1 - Aircraft Trades

Volume 2 - Armourer, Armament, and Weapons Technician Trades

Volume 3 - Body and Tire Repair Trades

Volume 4 - Driver and Driver Mechanic Trades

Volume 5 - Electrical Trades

Volume 6 - Instructor Trades

Volume 7 - Instrument Trades

Volume 8 - Metals, Machinist, and Welding Trades

Volume 9 - Radar and Fire Control System (1950s) Trades

Volume 10 - Radio and Telecommunication Trades

Volume 11 - Recovery Mechanic Trades

Volume 12 - Vehicle Repair Trades

Volume 13 - Other Trades

Volume 14 - Trade Reviews

Volume 15 - Post-Unification Trades

Volume 16 - RCEME Trades in 2020

Source Documents

This is a supporting reference for *RCEME Trades 1944-2020, A Reference Guide*. The list of sources for the main document is reproduced below. Where possible, the source document (or a relevant excerpt) has been scanned and placed on the RCEME Historical Database. Sometimes, a copy may be on the Internet Archive. One location of the primary document is included - there may be other copies in existence.

Primary sources include:

Instructions Regarding Trades Tests and Tradesmen's Rates of Pay, Canadian Army (Overseas), 1943. A copy is available in the Canadian War Museum under the call reference UB 337 I57 CWM Ref Tech 1943. Short reference in this document: [Trades 1943]. This document does not relate trades to a specific Corps. The relationship to RCOC(E) and later RCEME is inferred.

Instructions Regarding Trades Tests and Trades Testing, Canadian Army, 1944. Queens Printer, 1944. A copy is available in the Canadian War Museum under the call reference UB 337 C2 I5 CWM Ref Tech 1944. Short reference in this document: [Trades 1944]. This reference had two major amendments: AL 1 dated 1 January 1945, and AL 2 (not dated), both included in the reference. This reference relates to the Canadian Army as a whole, and not just the Canadian Army Overseas. The assignment of trades to Corps includes RCEME, which is evidence that it was updated after the formation of CEME/RCEME.

Canadian Army Routine Order (CARO) No. 4230 dated 15 March 1944. The Annexes to this CARO (and subsequent CAROs that amended CARO 4230) detailed the units and trades that were to be transferred to the new Corps of RCEME. The Canadian War Museum has a set of CARO.

Canadian Army Routine Order No. 6579 dated 20 May 1946. This was the first major postwar regrouping of Army trades and classification of tradesmen. A copy is available in the Canadian War Museum under the call reference Ref Tech Folio UB 505 C2 A7. Short reference in this document: [CARO 6579 (1946)].

Canadian Army Order No. 269-1 dated 8 April 1947. This order amplified and clarified[CARO 6579 (1946)] and is part of the new Canadian Army Orders series that replaced the Canadian Army Routine Orders in 1947. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. It also announced that a new publication "Canadian Army Trades Tests 1946" would be issued, (which has not been found). Short reference in this document: [CAO 269-1 (1947)].

Canadian Army Order No. 269-1 dated 22 August 1949. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1947)]. It also assigned trades to specific Corps. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1949)]. This reference was amended in CAO 269-1 dated 6 February 1950, which is included as part of this source.

Canadian Army Order No. 269-1 dated 27 November 1950. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1949)]. A copy is available in the Canadian War

Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1950)].

Canadian Army Order No. 269-1 dated 5 May 1952. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1950)]. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1952)].

There would appear to have been an update to CAO 269-1 in 1954, but the CWM does not have a copy of that CAO - DHH might.

Canadian Army Manual of Trades and Specialties. This detailed the Canadian Army trade standards and specifications and replaced the Canadian Army Trades Tests series. The manual seems to have come into effect by CAO 225-52 dated 18 November 1957. There is apparently no CAO 269-1 after that date. The RCEME trades extracted from this document are dated in the late 1950s and early 1960s. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 337 C2 C3 n.d. This reference is not complete. A complete version may exist at DHH (apparently not). Short reference in this document: [CAMTS].

Files in the Library and Archives, Canada (LAC). There are files in the LAC on many of the RCEME trades in the 1950s and early 1960s. These files have been reviewed and the specific file reference is contained in Annex A for the specific trade in question. See also the Army Trades Committee paragraph below. Short reference in this document: [LAC - file reference].

A specific file at the LAC is RG24-C-1-a, Volume 2165, File HQS-54-27-35-320, Trades Training & Tests - RCEME - Policy 1944-1947. It is not complete, but provides documentary evidence of the DEME position on the creation and elimination of some trades. Where other official confirmation has not been found (e.g. in the Army Trades Committee files), this file has been accepted as an authority. Short reference in this document: [LAC - Policy - Training of Tradesmen, RCEME]

Army Trades Committee and Army Trades Committee Sub-committee files at the LAC. A specific series of files at the LAC are the minutes of the Army Trades Committee and Army Trades Committee Sub-committee from about 1950 to 1965. They are best located by using the LAC search engine. The minutes give the approval (and date) for trade actions, and are often accompanied by supporting documentation such as trades specifications. Short reference in this document: [LAC - ATC and LAC - ATCSC]. The Directorate of History and Heritage also has a copy of some of these files. Between DHH and the LAC, there should be a complete set.

Files in the RCEME Archives. The RCEME archives, currently located at the RCEME School, have a few trades files. Most date from the early 1960s. There is a separate list ing of all the files in the RCEME archives. Short reference in this document: [RCEME Archives].

Bennett, Thomas J. **Skill at Arms, A History of Canadian Army Trades including their Badges and Parachute Wings**. Bunker to Bunker Books, Calgary, AB, 2005. The book appears to be out of print. A copy is in the Canadian War Museum Library under the call number UC 535 C3 B458 2005. Short reference in this document: [Skill at Arms]. It is an outstanding reference work, and was used heavily in the creation of the first draft of this document. However, unfortunately it does not link to primary

sources, and has been replaced as a source document as primary sources become available. That said, few discrepancies have been found, and I have full confidence in this book as a source. It was my primary reference for relating the badges worn by the trades.

RCEME Historical Database. Documents of general and specific interest to RCEME have been placed on a Google drive, part of which is shared with the public. All files in the public section of the database can be downloaded. The database can be accessed through the history and heritage tab on the Corps of RCEME website. Supporting documentation is in the RCEME Complete Digital Archives on the same Google Drive. The supporting documentation (such as the raw document scans) is not available to the general public, but can be requested from the RCEME Historian if required. Short reference in this document: [RCEME Historical Database].

RCEME Trades Source Documents at the LAC (Postwar and Pre-Unification)

The following Policy of Training and Qualifications files have been located at the LAC. All files have been reviewed and relevant details, including trades specifications, have been photographed and a pdf file of the information has been created and placed on the RCEME Historical Database. In general, the information contained in the files is limited to a copy of the draft trades standard. It is a disappointing source, but provides an index to the trades that were in existence.

Policy of Training and Qualifications - Artificers 1951-1961. [LAC Reference: RG24-C-1-c, Volume/box number 31348, File number 3202-A15.]

Policy of Training and Qualifications - Body Repairman 1952-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31348, File number 3202-B22.]

Policy of Training and Qualifications - Driver Mechanics (Wheeled) 1956-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31349, File number 3202-D22/2.]

Policy of Training and Qualifications - Driver Mechanics (Tracked) 1950-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31349, File number 3202-D22/1.]

Policy of Training and Qualifications - Electrical Mechanic 1955-1960. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-E14.]

Policy of Training and Qualifications - Fire Control System Technician (AA) 1955-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-F9.]

Policy of Training and Qualifications - Fitters 1949-1950. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-F18.]

Policy of Training and Qualifications - Instructors (RCEME) 1950-1955. [LAC Reference: RG24-C-1-c, Volume/box number 31363, File number 3202-J2/7.]

Policy of Training and Qualifications - Instrument Technician 1950-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-J11.]

Policy of Training and Qualifications - Machinist Fitter 1951-1962. [LAC Reference: RG24-C-1-c, Volume/box number 31363, File number 3202-M2/1.]

Policy of Training and Qualifications - Machinist (Metal) 1946-1965. [LAC Reference: RG24-E-1-c, Volume/box number 32842, File number 450-M1. RCAF file.]

Policy of Training and Qualifications - Master Vehicle Technicians 1954-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V8/M.]

Policy of Training and Qualifications - Master Weapons Technician 1955-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W8/M.]

Policy of Training and Qualifications - Projectionist Clerk. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-P49.]

Policy of Training and Qualifications - Radar Technician 1951-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R3.]

Policy of Training and Qualifications - Radio Technician 1955-1960. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R12.]

Policy of Training and Qualifications - Recovery Mechanic 1953-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R11.]

Policy of Training and Qualifications - Tire Repairman 1952-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-T18.]

Policy of Training and Qualifications - Typewriter Mechanics 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-T30.]

Policy of Training and Qualifications - Vehicle Mechanics 1950-1961. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V6.]

Policy of Training and Qualifications - Vehicle Mechanics 1961-1963. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V6.]

Policy of Training and Qualifications - Watchmaker 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W4.]

Policy of Training and Qualifications - Weapons Technician 1954-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W8.]

Policy of Training and Qualifications - Welders 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W6.]

Control Equipment Artificer Group 4 (proposed), 1954

FILE NUMBER 1200-T3-1 VOL. 1

C R 117
100M-12-49 (2973)
HQ 200-115-CR 117

DEPARTMENT OF NATIONAL DEFENCE ARMY

SUB-COMMITTEE OF THE ARMY TRADES COMMITTEE

DEAD DEAD

VOL. 1

FILE NUMBER 1200-T3-1

FOR CROSS REFERENCES SEE INSIDE COVER

REFERRED	FOR REMARKS	DATE OF PASS	INITIALS	DATE OF P.A.	INITIALS	DATE OF B.F.	CENTRAL REGISTRY	INSPECTED IN C.R. BY
D mt	NEW FILE CR NOV 2 5 1950			5 Mar 52			MAR 6 1952	

ARMY HEADQUARTERS

HQ 1200-T3-1 (Trg T&A)

OTTAWA, 5 May 54

The 47th Meeting of the Sub-Committee of the
Army Trades Committee
will be held
in Room 3542, "A" Bldg, National Defence Headquarters
on Thursday, 13 May 54 at 0900 hours.

(E.W. Cutbill) Lt-Col
Chairman
Sub-Committee of the Army Trades
Committee

4388

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AGENDA

SUBJECT

Clerk Accounting (RCAMC) Groups 2 and 3
(Sponsor DGMS)

Introduction of the re-written specification for the trade of Clerk Accounting (RCAMC) Groups 2 and 3. It differs from the former specification as follows:

(a) Method of qualification now requires specific functions for each group rather than allowing alternative functions for qualification.

(b) Group 3 qualification requires a trade test in addition to certification of proficiency by the Commanding Officer.

The proposed specification is at Appendix "A".

Item 2 Despatcher Air Supply Group 1
(Sponsor DST)

Introduction of the re-written specification for the specialty of Despatcher Air Supply Group 1. It differs from the former specification as follows:

(a) The sub-function requiring the use of a load adjuster for calculating load distribution has been deleted.

(b) Functions on monorail and rigging for heavy drops have been added because of the introduction of new equipment.

The proposed specification is at Appendix "B".

Item 3 Steward Groups 1 and 2

Introduction of the proposed specification for the new trade of Steward Groups 1 and 2.

This proposed trade will apply to mess orderlies, barmen, sergeants' mess caterers and officers' mess stewards.

The proposed specification is at Appendix "C".

Item 4 Field Engineer Groups 1,2,3 and 4
(Sponsor CE)

Introduction of the re-written specification for the specialty of Field Engineer Groups 2,3 and 4. It differs from the former specification in that group 1 has been added to include the functions at present carried out by the Pioneer (RCE) Group 1. The latter specialty is recommended for deletion.

The proposed specification is at Appendix "D".

Control Equipment Electrician Groups 1,2 and 3
(Sponsor DEME)

Introduction of the proposed specification for the new trade of Control Equipment Electrician Groups 1, 2 and 3.

This trade will cover the repair and maintenance of the 90mm AA gun, remote control equipment, the computer and plotting board and the M33 radar and other associated equipment of the 90mm battery. This trade combines some of the mechanic skill of an instrument mechanic and some of the electronic knowledge of the radar mechanic. There is no comparable single trade now authorized combining these skills and knowledge. The tradesman will be responsible, under minimum supervision, for adjusting, overhauling, repairing and modifying AA fire control equipment and other components.

The proposed specification is at Appendix "Q".

Item 20 Control Equipment Artificer Group 4
(Sponsor DEME)

Introduction of the proposed specification for the new trade of Control Equipment Artificer Group 4.

This new trade will progress from the Control Equipment Electrician and includes the additional skills and knowledge required of an artificer in that trade. The tradesman will be responsible, under minimum supervision, for the operation of a workshop section and the training and supervision of junior tradesmen.

The proposed specification is at Appendix "R".

Item 21 Electrical Mechanic Groups 1,2 and 3
(Sponsor DEME)

Introduction of the re-written specification for the trade of Electrical Mechanic Groups 1,2 and 3. It differs from the former specification as follows:

(a) Sub-functions have been added to include the additional theoretical and practical knowledge and skills for the maintenance and repair of the electronic control system of the Centurian tank.

(b) Reference to searchlights have been deleted. This function will be treated as a special equipment course for those tradesmen requiring it.

The proposed specification is at Appendix "S".

2 Electrical Artificer Group 4
(Sponsor DEME)

Introduction of the re-written specification for the trade of Electrical Artificer Group 4. There are no significant changes from the former specification.

The proposed specification is at Appendix "T".

Item 23 Instrument Mechanic Groups 1,2 and 3
(Sponsor DEME)

Introduction of the re-written specification for the trade of Instrument Mechanic (Optical) Groups 1, 2 and 3. It differs from the former specification as follows:

(a) The word "optical" has been deleted from the trade name as the trade of Instrument Mechanic (Electrical) is to be deleted and it will no longer be necessary to differentiate between the two types of mechanics.

(b) The following sub-functions have been added:

(i) General knowledge of cameras.

(ii) Mechanical operation of motion picture projectors.

(iii) Speedometers and tachometers.

(iv) Lock and safe mechanisms.

(v) Meteorological instruments.

The proposed specification is at Appendix "U".

Item 24 Instrument Artificer Group 4
(Sponsor DEME)

Introduction of the re-written specification for the trade of Instrument Artificer (AA) Group 4. It differs from the former specification in that the name has been changed to delete "AA". There are no other significant changes.

The proposed specification is at Appendix "V".

Appendix "R"

Effective Date:

SPECIFICATION FOR ARMY TRADES AND SPECIALTIES

CONTROL EQUIPMENT ARTIFICER GROUP 4

1. CLASSIFICATION

1.1 Full Title

Control Equipment Artificer Group 4

2. SUMMARY

2.1 Supervises a workshop section in the repair and overhaul of all electronic anti-aircraft fire control equipment, except radar. Inspects and reports on the maintenance and condition classification of these equipments.

3. DUTIES AND TASKS

3.1 Trade Duties

.1 Assists in planning section work loads and keeping section records.

.2 Recommends the repair or condemnation of equipment, taking into consideration the scope and class of repair, availability of parts and labour, repair facilities and cost.

.3 Inspects unit equipment, assigns condition classification and maintenance grading, and prepares summaries of inspections.

.4 Advises user units on the maintenance, unit repair and backloading of anti-aircraft fire control equipment.

.5 Prepares misuse reports and provisional condemnation certificates.

.6 Advises on all technical matters concerning equipments applicable to his trade and prepares summaries of investigations.

.7 Supervises a workshop section in the repair and modification of all anti-aircraft fire control equipment, except radar.

.8 Carries out specification testing and final inspection on all anti-aircraft fire control equipment, except radar.

.9 Adjusts and carries out field repairs to test equipment applicable to his trade.

.10 Reports on equipment failures and recurring breakdown of components and suggests remedial action.

.11 Designs and manufactures jigs, fixtures, test panels and substitute parts.

.12 Devises methods of testing and repairing equipments for which no technical information exists.

.13 Uses and interprets technical manuals and text books.

.14 Trains junior tradesmen, in the performance of their duties by direct supervision or periods of in-job training, and assesses their ability.

CONTROL EQUIPMENT ARTIFICER GROUP 4

3.2 Regimental Duties

.1 See Part II of the manual, Detailed Instructions Relating to Trades and Specialties, paragraph 8.

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The skills and knowledge required by personnel employed at this trade are broken down into functions.

GROUP 4

4.2 A Control Equipment Artificer Group 4, requires a knowledge of, and training and experience in, the following functions to enable him to perform his duties under minimum supervision:

Serial	Function
1	Technical Administration
	.1 Writing technical reports and instructions. .2 Estimating and costing. .3 Preparing spare parts scales. .4 Modification and design change procedure. .5 Section accounting procedures. .6 The EME Manual and RCEME Corps Instructions.
2	Machine Shop Practice
	.1 Precision drilling. .2 Using a lathe for: .1 Boring. .2 Screwcutting. .3 Taper turning. .4 Tool post grinding.
3	Repair and Overhaul
	.1 The Corps repair policy. .2 Scope of other Corps trades. .3 Advanced theory of trade equipments. .4 Advanced fault finding. .5 Repair and overhaul procedures. .6 Workshop layout. .7 Production line methods. .8 Anti-aircraft gunnery problem. .9 Layout of an anti-aircraft battery.
4	Performance Testing
	.1 Methods of testing to determine efficiency of operation. .2 Testing, adjusting and calibration of test equipment. .3 Specification testing.
5	Inspecting
	.1 Responsibilities of an inspection team. .2 Inspection team procedures.

5. RESPONSIBILITY

5.1 A Control Equipment Artificer is responsible, under minimum supervision, for the operation of a workshop section and the training and supervision of junior tradesmen.

CONTROL EQUIPMENT ARTIFICER GROUP 4

6. WORKING CONDITIONS

6.1 Duties are performed under conditions which may invlove cramped quarters and exposure to weather.

6.2 Electric shock is the principal hazard.

7. METHOD OF QUALIFICATION

7.1 Qualification for Group 4

.1 In order to qualify as a Control Equipment Artificer Group 4, the candidate must:

.1 Be a Control Equipment Electrician Group 3, and

.2 Have passed a RCEME senior non-commissioned officer's course, and

.3 Have passed a pre-artificer assessment authorized by Army Headquarters.

.2 Qualification may then be obtained by passing a course authorized by Army Headquarters.

.3 The scope of the pre-artificer assessment will be detailed by Army Headquarters.

.4 The scope of the course will include the functions listed in paragraph 4.2.

8. CAREER POSSIBILITIES

8.1 This trade does not normally progress to any other trade or specialty.

8.2 Advancement in rank is governed by regulations laid down by the Adjutant-General.

9. RELATED OCCUPATIONS

9.1 Navy - Electrical Technician Group 4

9.2 Air Force - Armament Systems Superintendent

9.3 Civilian - None

Control Equipment Technician Group 1 & 2 & 3 (proposed), 1954

FILE NUMBER 1200-T3-1 VOL. 1

C R 117
100M-12-49 (2973)
HQ 200-115-CR 117

DEPARTMENT OF NATIONAL DEFENCE ARMY

SUB-COMMITTEE OF THE ARMY TRADES COMMITTEE

DEAD DEAD

VOL. 1

FILE NUMBER 1200-T3-1

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OTTAWA, 5 May 54

The 47th Meeting of the Sub-Committee of the
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(E.W. Cutbill) Lt-Col
Chairman
Sub-Committee of the Army Trades
Committee

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AGENDA

SUBJECT

Clerk Accounting (RCAMC) Groups 2 and 3
(Sponsor DGMS)

Introduction of the re-written specification for the trade of Clerk Accounting (RCAMC) Groups 2 and 3. It differs from the former specification as follows:

(a) Method of qualification now requires specific functions for each group rather than allowing alternative functions for qualification.

(b) Group 3 qualification requires a trade test in addition to certification of proficiency by the Commanding Officer.

The proposed specification is at Appendix "A".

Item 2 Despatcher Air Supply Group 1
(Sponsor DST)

Introduction of the re-written specification for the specialty of Despatcher Air Supply Group 1. It differs from the former specification as follows:

(a) The sub-function requiring the use of a load adjuster for calculating load distribution has been deleted.

(b) Functions on monorail and rigging for heavy drops have been added because of the introduction of new equipment.

The proposed specification is at Appendix "B".

Item 3 Steward Groups 1 and 2

Introduction of the proposed specification for the new trade of Steward Groups 1 and 2.

This proposed trade will apply to mess orderlies, barmen, sergeants' mess caterers and officers' mess stewards.

The proposed specification is at Appendix "C".

Item 4 Field Engineer Groups 1,2,3 and 4
(Sponsor CE)

Introduction of the re-written specification for the specialty of Field Engineer Groups 2,3 and 4. It differs from the former specification in that group 1 has been added to include the functions at present carried out by the Pioneer (RCE) Group 1. The latter specialty is recommended for deletion.

The proposed specification is at Appendix "D".

Control Equipment Electrician Groups 1,2 and 3
(Sponsor DEME)

Introduction of the proposed specification for the new trade of Control Equipment Electrician Groups 1, 2 and 3.

This trade will cover the repair and maintenance of the 90mm AA gun, remote control equipment, the computer and plotting board and the M33 radar and other associated equipment of the 90mm battery. This trade combines some of the mechanic skill of an instrument mechanic and some of the electronic knowledge of the radar mechanic. There is no comparable single trade now authorized combining these skills and knowledge. The tradesman will be responsible, under minimum supervision, for adjusting, overhauling, repairing and modifying AA fire control equipment and other components.

The proposed specification is at Appendix "Q".

Item 20 Control Equipment Artificer Group 4
(Sponsor DEME)

Introduction of the proposed specification for the new trade of Control Equipment Artificer Group 4.

This new trade will progress from the Control Equipment Electrician and includes the additional skills and knowledge required of an artificer in that trade. The tradesman will be responsible, under minimum supervision, for the operation of a workshop section and the training and supervision of junior tradesmen.

The proposed specification is at Appendix "R".

Item 21 Electrical Mechanic Groups 1,2 and 3
(Sponsor DEME)

Introduction of the re-written specification for the trade of Electrical Mechanic Groups 1,2 and 3. It differs from the former specification as follows:

(a) Sub-functions have been added to include the additional theoretical and practical knowledge and skills for the maintenance and repair of the electronic control system of the Centurian tank.

(b) Reference to searchlights have been deleted. This function will be treated as a special equipment course for those tradesmen requiring it.

The proposed specification is at Appendix "S".

2 Electrical Artificer Group 4
(Sponsor DEME)

Introduction of the re-written specification for the trade of Electrical Artificer Group 4. There are no significant changes from the former specification.

The proposed specification is at Appendix "T".

Item 23 Instrument Mechanic Groups 1,2 and 3
(Sponsor DEME)

Introduction of the re-written specification for the trade of Instrument Mechanic (Optical) Groups 1, 2 and 3. It differs from the former specification as follows:

(a) The word "optical" has been deleted from the trade name as the trade of Instrument Mechanic (Electrical) is to be deleted and it will no longer be necessary to differentiate between the two types of mechanics.

(b) The following sub-functions have been added:

(i) General knowledge of cameras.

(ii) Mechanical operation of motion picture projectors.

(iii) Speedometers and tachometers.

(iv) Lock and safe mechanisms.

(v) Meteorological instruments.

The proposed specification is at Appendix "U".

Item 24 Instrument Artificer Group 4
(Sponsor DEME)

Introduction of the re-written specification for the trade of Instrument Artificer (AA) Group 4. It differs from the former specification in that the name has been changed to delete "AA". There are no other significant changes.

The proposed specification is at Appendix "V".

Appendix "Q"

Effective Date:

SPECIFICATION FOR ARMY TRADES AND SPECIALTIES

CONTROL EQUIPMENT ELECTRICIAN GROUPS 1, 2 AND 3

1. CLASSIFICATION

1.1 Full Title

Control Equipment Electrician Group 1
Control Equipment Electrician Group 2
Control Equipment Electrician Group 3

2. SUMMARY

2.1 Inspects, tests, adjusts, repairs and modifies all types of electrical and electronic anti-aircraft fire control equipment, with the exception of radar.

3. DUTIES AND TASKS

3.1 Trade Duties

.1 Performs bench fitting operations such as filing, grinding, drilling and tapping.

.2 Operates power tools such as bench lathes, drill presses and grinders.

.3 Splices, solders, insulates and terminates single, stranded and multiple core cables.

.4 Finds faults in and adjusts and repairs anti-aircraft gun control equipment.

.5 Finds faults in and adjusts and repairs anti-aircraft electronic computors and data transmission systems.

.6 Carries out minor repairs, and adjusts hydraulic control units on anti-aircraft fire control equipment.

.7 Carries out minor repairs, to electric motors and generators and their controls, on anti-aircraft gun sites.

.8 Maintains storage batteries and battery charging equipment.

.9 Interprets circuit and wiring diagrams and drawings of mechanical parts.

.10 Refers to the EME manual, parts lists and other technical publications for information on specifications, modifications and repair instructions.

.11 Completes the required portions of accounting documents used in connection with the trade.

.12 Acts as a member of a team inspecting unit equipment and records.

.13 Instructs junior tradesmen in the performance of their duties.

3.2 Regimental Duties

.1 See Part II of the manual, Detailed Instructions Relating to Trades and Specialties, paragraph 8.

CONTROL EQUIPMENT ELECTRICIAN GROUPS 1, 2 AND 3

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The skills and knowledge required by personnel employed at this trade are broken down, by groups, into functions.

GROUP 1

4.2 A Control Equipment Electrician Group 1, requires a knowledge of, and training and experience in, the following functions to enable him to perform his duties under direct supervision:

Serial	Function
1	Bench Fitting and Shop Practice
	.1 Safety precautions. .2 Care and use of: .1 Hand tools. .2 Power tools. .3 Common measuring instruments. .3 Soldering techniques. .4 Properties of insulating materials. .5 Splicing, insulating, terminating and vulcanizing cables.
2	Fault Finding
	.1 Mathematics. .2 Mechanics. .3 Fundamentals of electricity. .4 Electronic circuits and systems applicable to anti-aircraft fire control. .5 Mechanical systems. .6 Safety precautions. .7 First aid for electric shock.
3	Repairing and Overhauling
	.1 Interpreting circuit and wiring diagrams. .2 Interpreting mechanical drawings and simple blueprints.
4	Servicing
	.1 Maintenance of secondary batteries. .2 Battery charging equipment.
5	Testing and Adjusting
	.1 Care and use of test equipment. .2 Testing electrical and electronic components.

GROUP 2

4.3 In addition to the requirements for group 1, the group 2 tradesman must have a knowledge of, and training and experience in, the following functions to enable him to perform his duties under general supervision:

CONTROL EQUIPMENT ELECTRICIAN GROUPS 1, 2 AND 3

Serial	Function
2	Fault Finding
	.8 Procedures for: .1 Anti-aircraft gun control equipment .2 Anti-aircraft electronic computors .3 Data transmission systems .4 Plotting equipment .5 Hydraulic control units .6 Electrical components.
3	Repairing and Overhauling
	.3 Replacing electrical, electronic and mechanical components and assemblies. .4 Refinishing. .5 Rewiring electrical and electronic circuits. .6 Unit repairs to: .1 Electric motors .2 Generators and control panels .3 Transformers .4 Hydraulic control units.
4	Servicing
	.3 Preservation procedures. .4 Maintenance procedures. .5 Operation of gasoline and diesel generating sets. .6 Principles of lubricants and lubrication. .7 Winterizing and tropicalizing.
5	Testing and Adjusting
	.3 Test equipment. .4 Methods for: .1 Electrical and electronic components .2 Selsyns and magslips .3 Junction boxes and slip rings .4 Anti-aircraft electronic computors .5 Anti-aircraft gun control systems .6 Hydraulic control units .7 Data transmission systems .8 Electric motors and generators.
6	Administration
	.1 Workshop accounting procedures. .2 Repair and backloading. .3 The EME manual and other technical publications.

GROUP 3

4.4 In addition to the requirement for group 2, the group 3 tradesman must have a knowledge of, and training and experience in, the following functions to enable him to perform his duties under minimum supervision:

CONTROL EQUIPMENT ELECTRICIAN GROUPS 1, 2 AND 3

Serial	Function
2	Fault Finding
	.9 Anti-aircraft gun control equipment. .10 Anti-aircraft electronic computors. .11 Hydraulic control units. .12 Data transmission systems. .13 Plotting equipment. .14 Test equipment.
3	Repairing and Overhauling
	.7 Repairing electrical, electronic and mechanical components and assemblies. .8 Unit repairs to: .1 Starters and controllers. .2 Transformers. .3 Electrical system of generating sets. .4 Test equipment .9 Modification procedures.
5	Testing and Adjusting
	.5 Test equipment. .6 Anti-aircraft gun control systems. .7 Anti-aircraft electronic computors. .8 Plotting equipment. .9 Overall testing of a complete medium anti-aircraft fire control system.
6	Administration
	.4 Inspection procedures and forms.

5. RESPONSIBILITY

5.1 A Control Equipment Electrician is responsible, under minimum supervision, for adjusting, overhauling, repairing and modifying anti-aircraft fire control equipments and their components.

6. WORKING CONDITIONS

6.1 Duties are performed under conditions which may involve cramped quarters and some exposure to weather and fumes.

6.2 Electric shock and acid burns are the principle hazards.

7. METHOD OF QUALIFICATION

7.1 Qualification for Group 1

.1 Qualification may be obtained:

.1 By passing a course authorized by Army Headquarters, or

.2 By passing a trade test when authorized by Army Headquarters.

.2 The scope of the course and trade test will include the functions listed in paragraph 4.2.

CONTROL EQUIPMENT ELECTRICIAN GROUPS 1, 2 AND 3

7.2 Qualification for Group 2

.1 In order to qualify as a Control Equipment Electrician Group 2, the candidate must be a Control Equipment Electrician Group 1.

.2 Qualification may then be obtained:

.1 By passing a course authorized by Army Headquarters, or

.2 By passing a trade test when authorized by Army Headquarters.

.3 The scope of the course and trade test will include the functions listed in paragraph 4.3.

7.3 Qualification for Group 3

.1 In order to qualify as a Control Equipment Electrician Group 3, the candidate must be a Control Equipment Electrician Group 2.

.2 Qualification may then be obtained by passing a trade test authorized by Army Headquarters, after having been certified proficient in the functions listed in paragraph 4.4. This certification will be made by his commanding officer with assessment by the appropriate representative of The Corps of Royal Canadian Electrical and Mechanical Engineers in the command, area or formation concerned, where the commanding officer is not a member of that Corps.

.3 The scope of the trade test will include the functions listed in paragraph 4.4.

8. CAREER POSSIBILITIES

8.1 A Control Equipment Electrician may progress to Control Equipment Artificer if suitably qualified.

8.2 Advancement in rank is governed by regulations laid down by the Adjutant-General.

9. RELATED OCCUPATIONS

9.1 Navy - Electrical Technician (Fire Control)

9.2 Air Force - Armament Systems Technician

9.3 Civilian - None

Fire Control System Artificer
Group 4, 1954

FILE NUMBER 1200-T3 VOL. 2

CR 117 500M-4-81 (4657) NO 200-118-CR 117

DEPARTMENT OF NATIONAL DEFENCE

ARMY

DEAD

ARMY TRADES COMMITTEE

DEAD

FOR CROSS REFERENCES SEE INSIDE COVER

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DMT2	Returned, [illegible]	18-9-59	[illegible]				OCT 8 1963	
DMT	Math Vol. 3	8-19-53	[illegible]					
DEME	Per request + return plse	24/6/54	[illegible]					
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VOL. 2

FILE NUMBER 1200-T3

ATIP REVIEW SLIP / AIPRP BORDEREAU DE RÉVISION

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1200-T3 PC2

ARMY HEADQUARTERS

HQ 1200-T3 (MT 2)

OTTAWA, 24 Nov 54

The 140th Meeting of the Army Trades Committee

will be held

in Room 3517, "A" Bldg., National Defence Headquarters, on

Tuesday, 30th Nov 54 at 0930 hours.

(R. A. Keane)
Colonel
Chairman
Army Trades Committee

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Infantry Anti-tank Gunner Groups 1, 2 and 3
Infantry Machine Gunner Groups 1, 2 and 3
Infantry Mortarman Groups 1, 2 and 3
Infantry Pioneer Groups 1, 2 and 3
Sponsor D Inf

Introduction of a proposed amendment to the specifications for the above listed specialties with regard to the requirement for the senior specialists to instruct.

Concern has been expressed as to the quality of instruction which will exist in RCIC units if the training of group 2 specialty instructors is discontinued.

ISTC

In order to ensure that a high standard of instruction is maintained, it is proposed that the specifications for the specialties listed above be amended to require that candidates for group 3 qualification must have gained proficiency in, and be able to instruct in, all functions of the specialties.

To this end paragraph 4.4 of the specifications should be amended to read "In addition to the requirements for group 2, a group 3 specialist must have gained proficiency in, and be able to instruct in, the following functions to enable him to perform his duties under minimum supervision."

Specifications amended as above are at Appendices "J", "K", "L" and "M".

6. Infantry Signaller Groups 1 and 2
D Inf

Introduction of a proposed amendment to the specification for the specialty of Infantry Signaller Groups 1 and 2.

At present the Infantry Signaller Group 1 may obtain group 2 qualification in his specialty by qualifying as a Leading Infantryman Group 1 or a junior NCO.

Approved

Will require amendt of Ldg Infmn to delete progression to Inf Sig Spec

The functions of the Infantry Signaller and the Infantry Driver are both necessary for employment in a signals platoon. The group 2 specialist who obtains his qualification by combining Infantry Signaller Group 1 and Infantry Driver Group 1 is therefore more versatile than the one who combines Infantry Signaller Group 1 and Leading Infantryman Group 1.

It is therefore recommended that qualification for Infantry Signaller Group 2 be by obtaining the additional qualification of Infantry Driver Group 1 or junior NCO.

A specification amended as above is at Appendix "N".

7. Fire Control System Technician (Anti-aircraft) Groups 1, 2 and 3
Sponsor DEME

Introduction of the proposed specification for the new trade of Fire Control System Technician (Anti-aircraft) Groups 1, 2 and 3.

Under the existing trade structure, several different tradesmen are required, on site, to provide for the repair and maintenance of the M33 fire control system. In addition two artificers are required at the battery level. The proposed trade would enable a single tradesman to be employed on the entire fire control system from the radar antenna to the gun control, including the surveillance radar. Only one artificer would be required at the battery level. Approximately 120 tradesmen will be required in this trade. These will not require new establishment vacancies as existing vacancies will be converted.

ISTC

The Fire Control System Technician (Anti-aircraft) Group 3 will be responsible, under minimum supervision, for adjusting, repairing and modifying the anti-aircraft fire control system and its associated surveillance radar, and keeping them in an operational condition in the field.

The proposed specification is at Appendix "O".

B. 8. <u>Fire Control System Artificer (Anti-aircraft) Group 4</u>
Sponsor DEME

Introduction of the proposed specification for the new trade of Fire Control Artificer (Anti-aircraft) Group 4.

ISTC

This trade progresses from the Fire Control System Technician (Anti-aircraft) Group 3 and represents the artificer level in this field.

The Fire Control System Artificer (Anti-aircraft) Group 4 will be responsible, under minimum supervision, for the operation of a workshop section and the training and supervision of junior tradesmen.

The proposed specification is at Appendix "P".

9. <u>Recovery Mechanic Groups 2 and 3</u>
Sponsor DEME

Introduction of the submission for the deletion of the trade of Recovery Mechanic Groups 2 and 3 from the list of trades and specialties authorized for the Canadian Army.

The functions of the Recovery Mechanic are, in most cases, being performed by Vehicle Mechanics (Wheeled) or Vehicle Mechanics (Tracked). The functions of the Recovery Mechanic are in 3 categories:

approved

(a) Those functions covered by the Vehicle Mechanic specifications;

(b) Complicated recovery which is carried out by the Vehicle Artificer;

(c) Recovery procedure which is the function of any RCEME NCO.

Since the introduction of the trade of Recovery Mechanic it has been found that no requirement exists. It has therefore been recommended that this trade be deleted.

Armament Artificer (Coast Defence) Group 4
Sponsor DEME

Introduction of the submission for the deletion of the trade of Armament Artificer (Coast Defence) Group 4 from the list of trades authorized for the Canadian Army.

Approved

Many of the duties of this trade are similar to those performed by other Armament Artificers. Either the Armament Artificer (Anti-aircraft) or Armament Artificer (Field) can carry out the functions of the Armament Artificer (Coast Defence) with little additional training. The duties of the present tradesman are based on only one or two equipments and only 3 vacancies exist in the trade. Armament Artificers are now being trained on all equipments. Coast Defence vacancies are filled at present time by Armament Artificers (Anti-aircraft).

It is recommended that this trade be deleted.

11. Glider Pilot Groups 3 and 4
Sponsor DMT (MT 6)

Approved

Introduction of a submission for deletion of the trade of Glider Pilot from the list of trades authorized for the Canadian Army.

The RCAF have recommended that the use of gliders be discontinued and that powered aircraft be used in their place. This recommendation has been concurred in by the CGS and CAS and the Joint Training Directive has been amended. No further requirement is foreseen and no establishment vacancies will be provided.

Deletion is recommended.

12. Gunner Operator Group 1
Instructor RCAC Group 3
Instructor Tank Gunnery Group 2
Instructor Infantry (Anti-tank) Group 2
Instructor Infantry (Medium Machine Gun) Group 2
Instructor Infantry (Mortar) Group 2
Instructor Infantry (Pioneer) Group 2

Approved

Introduction of a submission for the deletion for the above listed specialties from the list of trades and specialties authorized for the Canadian Army.

These have been replaced by new specialties as follows:

Old Specialty	Replaced by
Gunner Operator Group 1	Gunner-Signaller Group 1
Instructor RCAC Group 3	Specialist RCAC Group 3
Instructor Tank Gunnery Group 2	Gunner-Signaller Group 2
Instructor Infantry (Anti-tank) Group 2	Infantry Anti-tank Gunner Group 3
Instructor Infantry (Medium Machine Gun) Group 2	Infantry Machine Gunner Group 3
Instructor Infantry (Mortar) Group 2	Infantry Mortarman Group 3
Instructor Infantry (Pioneer) Group 2	Infantry Pioneer Group 3

Deletion is recommended.

Appendix "P"

SPECIFICATION FOR ARMY TRADES AND SPECIALTIES

FIRE CONTROL SYSTEM ARTIFICER (ANTI-AIRCRAFT) GROUP 4

1. CLASSIFICATION

1.1 Full Title

Fire Control System Artificer (Anti-Aircraft) Group 4

2. SUMMARY

2.1 Finds faults in, repairs, tests, adjusts and inspects the anti-aircraft fire control system and its associated surveillance radar, except that used by light anti-aircraft units. Supervises and organizes the work of junior tradesmen.

3. DUTIES AND TASKS

3.1 Trade Duties

.1 Organizes and directs the repair, modification and preservation of the anti-aircraft fire control system and its associated surveillance radar, except that used by light anti-aircraft units.

.2 Assists in planning section work loads and keeping section records.

.3 Recommends the repair or condemnation of equipment, taking into consideration the scope and class of repair, availability of parts and labour, repair facilities and cost.

.4 Inspects unit equipment, assigns condition classifications and maintenance gradings, and prepares summaries of inspections.

.5 Advises user units on the maintenance, unit repair and backloading of the anti-aircraft fire control system and associated surveillance radar.

.6 Prepares misuse reports and provisional condemnation certificates.

.7 Advises on all technical matters concerning equipments applicable to his trade and prepares summaries of investigations.

.8 Carries out specification testing and final inspection on the anti-aircraft fire control system and associated surveillance radar.

.9 Adjusts and carries out field repairs to test equipment applicable to his trade.

.10 Reports on equipment failures and recurring breakdown of components and suggests remedial action.

.11 Designs and manufactures jigs, fixtures, test panels and substitute parts.

.12 Devises methods of testing and repairing equipments for which no technical information exists.

FIRE CONTROL SYSTEM ARTIFICER (ANTI-AIRCRAFT) GROUP 4

.13 Uses and interprets technical manuals and text books.

.14 Trains junior tradesmen in the performance of their duties by direct supervision or periods of in-job training, and assesses their ability.

3.2 Regimental Duties

.1 See Part II of the manual, Detailed Instructions Relating to Trades and Specialties, paragraph 8 (to be published at a later date).

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The skills and knowledge required by personnel employed at this trade are outlined under functional headings.

4.2 A Fire Control System Artificer (Anti-Aircraft) Group 4, requires a knowledge of, and training and experience in, the following functions to enable him to perform his duties under minimum supervision:

Serial	Function
1	Technical Administration
	.1 Writing technical reports and instructions.
	.2 Estimating and costing.
	.3 Preparing spare parts scales.
	.4 Modification and design change procedure.
	.5 Section accounting procedures.
	.6 Technical publications.
	.7 Appreciation and scope of RCEME and other corps trades.
2	Fault Finding and Repairing
	.1 RCEME repair policy.
	.2 Advanced electronic concepts and circuits.
	.3 Advanced electronic systems.
	.4 Mechanical systems.
	.5 Detailed circuit analysis.
	.6 Advanced fault finding.
	.7 Repair and overhaul procedures.
	.8 Field repairs to test equipment.
	.9 Workshop layout.
	.10 Production line methods.
	.11 The anti-aircraft problem.
	.12 Layout of an anti-aircraft site.
3	Performance Testing
	.1 Methods of testing to determine efficiency of operation.
	.2 Testing, adjusting and calibrating test equipment.
	.3 Specification testing.
4	Inspecting
	.1 Responsibilities of an inspection team.
	.2 Inspection team procedures.

FIRE CONTROL SYSTEM ARTIFICER (ANTI-AIRCRAFT) GROUP 4

5. RESPONSIBILITY

5.1 A Fire Control System Artificer (Anti-Aircraft) Group 4 is responsible, under minimum supervision, for the operation of a workshop section, and the training and supervision of a junior tradesmen.

6. WORKING CONDITIONS

6.1 Duties are performed inside a trailer or in the open on the gun site.

6.2 Electric shocks and burns are the principal hazards.

7. METHOD OF QUALIFICATION

7.1 Qualification for Group 4

.1 In order to qualify as a Fire Control System Artificer (Anti-Aircraft) Group 4, the candidate must:

.1 Be a Fire Control System Technician (Anti-Aircraft) Group 3; and

.2 Have passed a RCEME senior NCOs course; and

.3 Have passed a pre-artificer assessment authorized by Army Headquarters.

.2 Qualification may then be obtained by passing a course authorized by Army Headquarters.

.3 The scope of the course will include the functions listed in paragraph 4.2.

8. CAREER POSSIBILITIES

8.1 This trade does not normally progress to any other trade or specialty.

8.2 Advancement in rank is governed by regulations laid down by the Adjutant-General.

9. RELATED OCCUPATIONS

9.1 Navy - Electrical Technician Group 4
Radio Technician Group 4

9.2 Air Force - Armament Systems Superintendent
Telecommunication Maintenance Superintendent

9.3 Civilian -

	Dictionary of Occupational Titles Code Number
Radar Equipment Foreman	5-92.621
Foreman, Electrical Equipment	5-92.601

Effective Date:

Fire Control System Technician (Anti-aircraft) Group 1 & 2 & 3, 1954

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DEPARTMENT OF NATIONAL DEFENCE

ARMY

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ARMY TRADES COMMITTEE

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DM1	passed per req	17-9-53	DN					
DMT2	Returned, [illegible]	18-9-59	[illegible]				OCT 8 1963	
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DEME	Per request + return plse	24/6/54	[illegible]					
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VOL. 2

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ARMY HEADQUARTERS

HQ 1200-T3 (MT 2)

OTTAWA, 24 Nov 54

The 140th Meeting of the Army Trades Committee

will be held

in Room 3517, "A" Bldg., National Defence Headquarters, on

Tuesday, 30th Nov 54 at 0930 hours.

(R. A. Keane)
Colonel
Chairman
Army Trades Committee

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Infantry Anti-tank Gunner Groups 1, 2 and 3
Infantry Machine Gunner Groups 1, 2 and 3
Infantry Mortarman Groups 1, 2 and 3
Infantry Pioneer Groups 1, 2 and 3
Sponsor D Inf

Introduction of a proposed amendment to the specifications for the above listed specialties with regard to the requirement for the senior specialists to instruct.

Concern has been expressed as to the quality of instruction which will exist in RCIC units if the training of group 2 specialty instructors is discontinued.

ISTC

In order to ensure that a high standard of instruction is maintained, it is proposed that the specifications for the specialties listed above be amended to require that candidates for group 3 qualification must have gained proficiency in, and be able to instruct in, all functions of the specialties.

To this end paragraph 4.4 of the specifications should be amended to read "In addition to the requirements for group 2, a group 3 specialist must have gained proficiency in, and be able to instruct in, the following functions to enable him to perform his duties under minimum supervision."

Specifications amended as above are at Appendices "J", "K", "L" and "M".

6. Infantry Signaller Groups 1 and 2
D Inf

Introduction of a proposed amendment to the specification for the specialty of Infantry Signaller Groups 1 and 2.

At present the Infantry Signaller Group 1 may obtain group 2 qualification in his specialty by qualifying as a Leading Infantryman Group 1 or a junior NCO.

Approved

Will require amendt of Ldg Infmn to delete progression to Inf Sig Spec

The functions of the Infantry Signaller and the Infantry Driver are both necessary for employment in a signals platoon. The group 2 specialist who obtains his qualification by combining Infantry Signaller Group 1 and Infantry Driver Group 1 is therefore more versatile than the one who combines Infantry Signaller Group 1 and Leading Infantryman Group 1.

It is therefore recommended that qualification for Infantry Signaller Group 2 be by obtaining the additional qualification of Infantry Driver Group 1 or junior NCO.

A specification amended as above is at Appendix "N".

7. Fire Control System Technician (Anti-aircraft) Groups 1, 2 and 3
Sponsor DEME

Introduction of the proposed specification for the new trade of Fire Control System Technician (Anti-aircraft) Groups 1, 2 and 3.

Under the existing trade structure, several different tradesmen are required, on site, to provide for the repair and maintenance of the M33 fire control system. In addition two artificers are required at the battery level. The proposed trade would enable a single tradesman to be employed on the entire fire control system from the radar antenna to the gun control, including the surveillance radar. Only one artificer would be required at the battery level. Approximately 120 tradesmen will be required in this trade. These will not require new establishment vacancies as existing vacancies will be converted.

ISTC

The Fire Control System Technician (Anti-aircraft) Group 3 will be responsible, under minimum supervision, for adjusting, repairing and modifying the anti-aircraft fire control system and its associated surveillance radar, and keeping them in an operational condition in the field.

The proposed specification is at Appendix "O".

B. 8. <u>Fire Control System Artificer (Anti-aircraft) Group 4</u>
Sponsor DEME

Introduction of the proposed specification for the new trade of Fire Control Artificer (Anti-aircraft) Group 4.

ISTC

This trade progresses from the Fire Control System Technician (Anti-aircraft) Group 3 and represents the artificer level in this field.

The Fire Control System Artificer (Anti-aircraft) Group 4 will be responsible, under minimum supervision, for the operation of a workshop section and the training and supervision of junior tradesmen.

The proposed specification is at Appendix "P".

9. <u>Recovery Mechanic Groups 2 and 3</u>
Sponsor DEME

Introduction of the submission for the deletion of the trade of Recovery Mechanic Groups 2 and 3 from the list of trades and specialties authorized for the Canadian Army.

The functions of the Recovery Mechanic are, in most cases, being performed by Vehicle Mechanics (Wheeled) or Vehicle Mechanics (Tracked). The functions of the Recovery Mechanic are in 3 categories:

approved

(a) Those functions covered by the Vehicle Mechanic specifications;

(b) Complicated recovery which is carried out by the Vehicle Artificer;

(c) Recovery procedure which is the function of any RCEME NCO.

Since the introduction of the trade of Recovery Mechanic it has been found that no requirement exists. It has therefore been recommended that this trade be deleted.

Armament Artificer (Coast Defence) Group 4
Sponsor DEME

Introduction of the submission for the deletion of the trade of Armament Artificer (Coast Defence) Group 4 from the list of trades authorized for the Canadian Army.

Approved

Many of the duties of this trade are similar to those performed by other Armament Artificers. Either the Armament Artificer (Anti-aircraft) or Armament Artificer (Field) can carry out the functions of the Armament Artificer (Coast Defence) with little additional training. The duties of the present tradesman are based on only one or two equipments and only 3 vacancies exist in the trade. Armament Artificers are now being trained on all equipments. Coast Defence vacancies are filled at present time by Armament Artificers (Anti-aircraft).

It is recommended that this trade be deleted.

11. Glider Pilot Groups 3 and 4
Sponsor DMT (MT 6)

Approved

Introduction of a submission for deletion of the trade of Glider Pilot from the list of trades authorized for the Canadian Army.

The RCAF have recommended that the use of gliders be discontinued and that powered aircraft be used in their place. This recommendation has been concurred in by the CGS and CAS and the Joint Training Directive has been amended. No further requirement is foreseen and no establishment vacancies will be provided.

Deletion is recommended.

12. Gunner Operator Group 1
Instructor RCAC Group 3
Instructor Tank Gunnery Group 2
Instructor Infantry (Anti-tank) Group 2
Instructor Infantry (Medium Machine Gun) Group 2
Instructor Infantry (Mortar) Group 2
Instructor Infantry (Pioneer) Group 2

Approved

Introduction of a submission for the deletion for the above listed specialties from the list of trades and specialties authorized for the Canadian Army.

These have been replaced by new specialties as follows:

Old Specialty	Replaced by
Gunner Operator Group 1	Gunner-Signaller Group 1
Instructor RCAC Group 3	Specialist RCAC Group 3
Instructor Tank Gunnery Group 2	Gunner-Signaller Group 2
Instructor Infantry (Anti-tank) Group 2	Infantry Anti-tank Gunner Group 3
Instructor Infantry (Medium Machine Gun) Group 2	Infantry Machine Gunner Group 3
Instructor Infantry (Mortar) Group 2	Infantry Mortarman Group 3
Instructor Infantry (Pioneer) Group 2	Infantry Pioneer Group 3

Deletion is recommended.

Appendix "O"

SPECIFICATION FOR ARMY TRADES AND SPECIALTIES

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUPS 1, 2 AND 3

1. CLASSIFICATION

1.1 Full Title

Fire Control System Technician (Anti-Aircraft) Group 1
Fire Control System Technician (Anti-Aircraft) Group 2
Fire Control System Technician (Anti-Aircraft) Group 3

2. SUMMARY

2.1 Finds faults in, repairs, tests and adjusts the anti-aircraft fire control system and its associated surveillance radar except that used by light anti-aircraft units.

3. DUTIES AND TASKS

3.1 Trade Duties

.1 Finds electrical and mechanical faults in the radar of the anti-aircraft fire control system and its associated surveillance radar, using test equipment such as multimeters, oscilloscopes and other special test equipment.

.2 Finds electrical and mechanical faults in, and adjusts and repairs the anti-aircraft electronic computer.

.3 Finds electrical and mechanical faults, and adjusts and repairs the data transmission system and remote gun controls, including the hydraulic components.

.4 Aligns radar receivers and ensures that sensitivity and receiver band widths meet specifications.

.5 Carries out an overall operating efficiency test of the complete system, checking sensitivity, tuning, calibration and output information.

.6 Replaces faulty electrical and electronic components, and replaces and makes minor repairs to mechanical components and assemblies.

.7 Rewires chassis and replaces faulty rack wiring.

.8 Carries out minor repairs to electric motors.

.9 Operates and maintains electric generating sets and battery chargers, and services portable secondary batteries.

.10 Splices, solders, insulates and terminates all types of cables and connectors.

.11 Traces circuits, makes circuit diagrams, and prepares simple mechanical sketches.

.12 Carries out minor repairs to test equipment and checks their calibration.

.13 Refers to publications to obtain technical information.

.14 Completes section accounting documents and maintains a stock record of parts carried in the spare parts trailer.

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUPS 1, 2 AND 3

.15 Serves as a member of a team inspecting unit equipments.

.16 Instructs junior tradesmen in the performance of their duties.

3.2 Regimental Duties

.1 See Part II of the manual, Detailed Instructions Relating to Trades and Specialties, paragraph 8 (to be published at a later date).

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The skills and knowledge required by personnel employed at this trade are outlined, by groups, under functional headings.

GROUP 1

4.2 The Fire Control System Technician (Anti-Aircraft) Group 1 requires a knowledge of, and training and experience in, the following functions to enable him to perform his duties under direct supervision:

Serial	Function
1	Workshop Practice
	.1 Safety precautions.
	.2 First aid for electric shocks and burns.
	.3 Care and use of hand tools.
	.4 Interpreting circuit and wiring diagrams and simple blueprints.
	.5 Chassis work and parts mounting.
	.6 Soldering techniques.
	.7 Wiring techniques.
2	Fault Finding
	.1 Fundamentals of electricity.
	.2 Electronic concepts and circuits.
	.3 Electronic systems.
	.4 Principles of fault finding.
3	Servicing
	.1 Portable secondary batteries.
4	Testing and Adjusting
	.1 Care and use of test equipment.
	.2 Electrical and electronic components.

GROUP 2

4.3 In addition to the requirements for group 1, a group 2 tradesman must have a knowledge of, and training and experience in, the following functions to enable him to perform his duties under general supervision:

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUPS 1, 2 AND 3

Serial	Function
2	Fault Finding
	.5 Circuitry.
	.6 Setting up procedures.
	.7 Techniques for:
	.1 Anti-aircraft remote gun controls.
	.2 Anti-aircraft electronic computer.
	.3 Data transmission system.
	.4 Acquisition radar.
	.5 Track radar.
	.6 Surveillance radar.
	.7 Plotting equipment.
	.8 Identification friend or foe system (IFF).
3	Servicing
	.2 Electric motors.
	.3 Preservation and de-preservation procedures.
	.4 Maintenance procedures.
	.5 Test equipment.
	.6 Electric generating sets.
4	Testing and Adjusting
	.3 Test equipment.
	.4 Function of a screened test cage.
	.5 Alignment procedures.
	.6 Methods for:
	.1 Anti-aircraft fire control system.
	.2 Surveillance radar.
	.7 Locating technical information.
5	Repairing
	.1 Replacing and repairing electrical and electronic components and assemblies.
	.2 Rewiring.
	.3 Unit repairs to:
	.1 Electric motors.
	.2 Generators and control panels.
	.3 Mechanical assemblies.
	.4 Selsyns.
	.5 Gun remote control system including hydraulic components.
6	Administration
	.1 Section accounting procedures.
	.2 Maintaining spare parts stock records.

GROUP 3

4.4 In addition to the requirements for group 2, a group 3 tradesman requires proficiency in the following functions to enable him to perform his duties under minimum supervision:

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUPS 1, 2 AND 3

Serial	Function
2	Fault Finding
	.8 Synchronizer system.
	.9 Transmitter system.
	.10 Receiver system.
	.11 Indicator system.
	.12 Power supply system.
	.13 Anti-aircraft remote gun controls.
	.14 Anti-aircraft electronic computer.
	.15 Data transmission system.
	.16 Plotting equipment.
	.17 Test equipment.
	.18 IFF system.
4	Testing and Adjusting
	.8 Operational testing.
	.9 Aligning.
	.10 Specification testing.
5	Repairing
	.4 Electrical and electronic components and assemblies.
	.5 Unit repairs to:
	.1 Electrical system of generating sets.
	.2 Test equipment.
6	Administration
	.3 Inspection forms and procedures.

5. RESPONSIBILITY

5.1 A Fire Control System Technician (Anti-Aircraft) Group 3 is responsible, under minimum supervision, for adjusting, repairing and modifying the anti-aircraft fire control system and its associated surveillance radar, and keeping them in an operational condition in the field.

6. WORKING CONDITIONS

6.1 Duties are performed inside a radar trailer or in the open on the gun site.

6.2 Hazards include exposure to electric shocks and burns.

7. METHOD OF QUALIFICATION

7.1 Qualification for Group 1

.1 Qualification may be obtained by one of the following methods:

.1 Passing a course authorized by Army Headquarters; or

.2 Passing a trade test when authorized by Army Headquarters.

.2 The scope of the course and trade test will include the functions listed in paragraph 4.2.

FIRE CONTROL SYSTEM TECHNICIAN (ANTI-AIRCRAFT) GROUPS 1, 2 AND 3

7.2 Qualification for Group 2

.1 In order to qualify as a Fire Control System Technician (Anti-Aircraft) Group 2, the candidate must be qualified as a Fire Control System Technician (Anti-Aircraft) Group 1.

.2 Qualification may then be obtained by one of the following methods:

.1 Passing a course authorized by Army Headquarters; or

.2 Passing a trade test when authorized by Army Headquarters.

.3 The scope of the course and trade test will include the functions listed in paragraph 4.3.

7.3 Qualification for Group 3

.1 In order to qualify as a Fire Control System Technician (Anti-Aircraft) Group 3, the candidate must be qualified as a Fire Control System Technician (Anti-Aircraft) Group 2.

.2 Qualification may then be obtained by passing a trade test authorized by Army Headquarters, after having been certified proficient in the functions listed in paragraph 4.4. This certification will be made by his commanding officer with assessment by the appropriate representative of The Corps of Royal Canadian Electrical and Mechanical Engineers in the command, area or formation concerned, where the commanding officer is not a member of that Corps.

.3 The scope of the trade test will include the functions listed in paragraph 4.4.

8. CAREER POSSIBILITIES

8.1 A Fire Control System Technician (Anti-Aircraft) Group 3 may progress to Fire Control System Artificer (Anti-Aircraft).

8.2 Advancement in rank is governed by regulations laid down by the Adjutant-General.

9. RELATED OCCUPATIONS

9.1 Navy - Electrical Technician (Fire Control)
Radio Technician (Detection)

9.2 Air Force - Armament Systems Technician
Radar Technician (Ground)
Radar Technician (Air)

9.3 Civilian -

	Dictionary of Occupational Titles Code Number
Radar Technician	5-83.449
Electrician, Radio	5-83.411
Electronics Technician	5-83.444

Effective Date:

Radar Technician, 1954

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ARMY

DEPARTMENT OF NATIONAL DEFENCE

POLICY OF TRAINING & QUALIFICATION
RADAR TECHNICIAN

VOL

FOR CROSS REFERENCES SEE INSIDE COVER

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IN REPLY PLEASE QUOTE
No. 3/AEME S/6001-1

CANADA

Department of National Defence
Army
HEADQUARTERS EASTERN ONTARIO AREA

KINGSTON Ontario 28 JUL 1954

HQ E Ont Area
KINGSTON, Ontario.

TELS MECH (RADAR)
AAFCS M33C TRAINING

1 There exists in PICTON CAMP, an urgent requirement for Radar Mechanics with M33C training.

2 The present situation in the Camp is that to service the following equipments.

8 - AAFCS M33C
1 - ANPS/FS 501 (Mariner)
10 - No 3 Mk I
7 - AA/MPS 501B

Plus the radars at PETERBORO and GOOSE BAY serviced by 210 Wksp RCEME, there are the following personnel.

Unit	Establishment	No.on Strength	No. Trained on M33C
210 Wksp RCEME	14	10	5
RCSA (AA)	6	5	3
127 AA Bty	6	4	1
128 AA Bty	7	4	2
TOTAL -	33	23	11

3 It is obvious from the above tabulations that there is an immediate requirement for ten (10) Tels Mech (Radar) and that ALL should have M33C training.

4 The possibility of "In-Job" training has been investigated. It must be borne in mind that the M33C is more complex than the previous radars, and that the RCEME School course on this equipment takes a minimum of eighteen (18) weeks to cover the field of repairs and adjustments. Accordingly, you will understand that "In-Job" training on this equipment will be a long drawn out process, and it would be most unwise to depend on this medium to produce tradesmen familiar with the M33C.

5 In addition, the possibility of running actual courses to familiarize personnel with the M33C in after-duty hours has been considered and discarded because -

(a) Two (2) of the three (3) trained Artificers at PICTON CAMP will be on courses this Fall, and will not be available as instructors.

(b) Two (2) of the Sgts who might be used as instructors are not trained on M33C.

(c) The amount of time available in after-duty hours is limited when the matter of fatigue is considered.

C.A.F.A. 239
750M—11-51 (5309)
H.Q. 4554-A-239

SECRET

(TUMBLE)

6 Because of the lack of personnel (30% under strength) and the present repair commitment, it is not now possible for us to afford to send more people on courses at the RCEME School.

7 It is urgent and essential that all personnel who have M33C training be employed on the repair and maintenance of M33Cs - the majority of which are held within this area.

8 May three (3) Sgts or Cpls and seven (7) Cfn with M33C training be procured for posting to vacancies in the PICTON CAMP.

4421 Local 15
EJOH/HU

(E J O Harvey) Major
AEME E Ont Area

4-6-2-37 (ME 1B)

HQ 3~~201 T15/3~~(ME 1)

3202-R3

ARMY HEADQUARTERS
OTTAWA, ONTARIO.
28 JUL 54.

Commandant,
The RCEME School,
KINGSTON, Ontario.

Training Tels Mech (Radar)

1. A further meeting was held at DEME on the 26 Jul during which the whole problem of Radar and Control Equipment tradesmen was re-examined. As a result, it was decided to abandon the original course of action, ie, the creation of a Control Equipment trade.

2. In place of this new trade it was decided to create a series of equipment tradesmen, eg:

(a) a Tels Mech dealing purely with the M33C fire control equipment in its entirety, including the electronic computor and gun controls;

(b) a system mechanic dealing entirely with guided missile external control equipment,

and so on for each new major equipment taken into use.

3. There are many advantages to this new approach, the most important of which is that one individual tradesman can be held responsible for all components on the gun site, having an electronic basis.

4. As a result of the above decision, certain adjustments will be required to the training plan of the Electrical Company during the next twelve months, which in the main are:

(a) The two Gun Control courses planned for Tels Arts (radar) will still be run as scheduled between Oct and Dec 54;

(b) The group 1 and 2 Control Equipment course planned to commence Jan 55 will no longer be necessary, but in its place will be the first of the group 2 M33C System Mechanic courses (Note: candidates for this course will be taken from the fifteen now attending CVTS, Winnipeg, Tels Mech (Common) course, and who are due to report to RCEME School 3 Jan 55);

(c) The Control Equipment Artificer conversion course planned for Jan 55 will not be necessary. Candidates for this course who were to have come from the thirteen Inst Arts (AA) have now been examined and all but two have insufficient electrical and electronic knowledge to attempt training in this new field;

PERS RCEME
Unit Listing
Alpha List
Cross Index
Status Card
Courses

(d) The M33C equipment course now scheduled for Jan 55 will not be required as there are insufficient candidates at the group 3 and artificer level to justify running this course.

5. RCEME School training plans will proceed on the above basis. Interim standards for the course mentioned in para 4(b) above are in preparation and will be forwarded as soon as completed.

(J R Dunlop)
Colonel
Director of Electrical and Mechanical Engineering

JLS/4305/ea